REMARKS

We have amended the claims to address the Examiner's rejections under 35 U.S.C. §112 and to more particularly point out and distinctly claim the invention. We have also added claims 25-33 directed to the system and the method that is at the receiving side of the transmitted emission-related information. After these amendments, claims 1-5 and 7-33 are pending in this application.

We acknowledge the Examiner's indication that claims 19 and 20 would be allowable if written in independent form.

The Examiner rejected claims 1-6 under 35 U.S.C. §102(b) as being anticipated by Tibbals, III (U.S. 5,343,906) and under 35 U.S.C. §102(e) as being anticipated by Lang et al. (U.S. 6,295,492). The Examiner also rejected claims 6-16 and 21-24 under 35 U.S.C. §103(a) as being obvious over Lang in view of EP 0 816 820 A2, and claims 17 and 18 as being obvious over Lang in view of EP 0 816 820 A2.

We note, however, that Tibbals is silent with regard to using a wireless communications network to transfer data from a vehicle to a host computer system, as recited in claim 1 as amended. Indeed, Tibbals' system is designed to work with a fuel station interface device that physically connects to the vehicle interface device when the vehicle is at the fuel station. So, to transfer data, Tibbals's system uses either an 'electrical cable' (col. 4, lines 19-20; '22' in Fig. 1), an optical 'transfer interface' (col. 6, lines 39-60; '50' in Fig. 6), or an 'IC card' (col. 8, lines 12-29; Fig. 9). Consequently, unlike the claimed invention, Tibbals's system lacks a wireless transmitter configured to transmit data over such a wireless communications network.

The Examiner did characterize the interface device shown on Fig. 6b of the Tibbals patent in the following way:

> The interface(s) for transferring the emissions data from the vehicle to the central facility may include a wireless transmitter in the form of an optical coupling...

But submit that it is not reasonable to characterize an optical coupling as a wireless transmitter. A person of ordinary skill in the art would not view the optical coupling of Tibbals as representing or implying either a wireless transmitter or a wireless network.

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With regard to the Examiner's rejection based on Lang, we note that Lang does not disclose analyzing data representing a vehicle's emissions or comparing the analyzed data to a predetermined value to characterize the vehicle's emissions, as recited in claim 1 as amended. Lang simply teaches a system that retrieves diagnostic data from a vehicle and wirelessly transmits these data to a host computer. Lang does not disclose analyzing emission-related data to characterize a vehicle's emissions.

The Examiner has relied on the combination of Lang with EP 0 816 820 A2 (EP) to produce a system that supposedly includes these other emission-related features of the claimed invention. The Examiner argues:

> EP discloses a method of analyzing vehicle emission data which is downloaded from a vehicle. The analyzer may include a computer model which estimates emissions over a predefined test period and displays the results (see 3, lines 42-47). One of ordinary skill in the art would have recognized that the functions performed on the emission data could have been carried out on the vehicle or at a remote host computer wherein the obvious advantage of using the host computer is greater computing power and data storage as well as the ability to compare emission data with similar make and model vehicles.

We note, however that EP already includes an onboard analyzer 16 for conducting emission analysis within the car. External analyzer 30 is used for further analysis of the conditions already detected by onboard analyzer 16. The purpose of onboard analyzer 16 is to provide an incentive (by way of fault indicators) for the vehicle owner to bring the vehicle in for further processing of the data and for taking corrective action. (page 2, lines 49-56). There is no motivation to wirelessly send the emission-related data to the external analyzer since it is desired that the vehicle be brought to the location of external analyzer 30 in response to a fault reported by onboard analyzer 16. It is intended that the data be transferred to external analyzer via a physical connection made to the vehicle when it visits the service station to address the fault.

We also note that the data that is required for the analysis done by the EP system is not available from an OBD-II system. It requires an emission analyzer 16 within the vehicle that is programmed to analyze data collected from the vehicle during its operation. Since Lang's system uses the OBD-II and that type of data is not available from OBD systems, there would be no motivation to combine the EP system with the Lang system in the manner proposed by the Examiner. The Examiner does seem to suggest that all of the analysis could be done outside of the vehicle based on the data obtained from the vehicle. But the data that is required to conduct

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the analysis performed by onboard analyzer 16 of the EP system is also not available through the OBD-II connector.

With regard to the newly added claims, we note that none of prior art relied upon by the Examiner teaches or suggests an Internet-based centralized system that collects emission-related data from a plurality of vehicles, analyzes that data, and also enables multiple users to access the analyzed data.

For the reasons stated above, we believe that the claims are allowable and therefore ask the Examiner to allow them to issue.

We acknowledge the Examiner's requirement that a new corrected Oath and Declaration be submitted. We will be submitting that upon receiving an indication that the claims are allowable.

Attached is a marked-up version of the changes being made by the current amendment.

Please apply any charges or credits to Deposit Account No. 08-0219.

Respectfully submitted,

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Version with markings to show changes made

In the specification:

Paragraph beginning at page 3, line 8 has been amended as follows:

A second generation of OBD systems, called OBD-II systems, monitor emission performance and a wide range of additional data that indicate the performance of the host vehicle. For example, in addition to emissions, OBD-II systems monitor vehicle speed, mileage, engine temperature, and intake manifold pressure. OBD-II systems also query manufacturer-specific data, such as engine-performance tuning parameters, alarm status, and properties relating to entertainment [systemsIn] systems. In total, OBD-II systems typically access hundreds of segments of data relating to the performance and make of the host vehicle.

Paragraph beginning at page 13, line 2 has been amended as follows:

Fig. 1 shows a wireless diagnostic system 10 that communicates with a collection of vehicles 30 using a host computer system 12 and a standard wireless communications system 15. The diagnostic system 10 remotely characterizes the vehicles' emissions. The wireless communications system 15 is, e.g., a conventional wireless – network, e.g. Bell South's Mobitex network. Each vehicle 32a, 32b, 32n in the collection of vehicles 30 features a data collector/router 35a, 35b, 35n that queries emissions data generated by each vehicle's ECU and OBD-II systems through an OBD buss. After the query, each data collector/router 35a, 35b, 35n receives emissions data from the host vehicle 32a, 32b, 32n and sends it as a data packet over a wireless airlink 38 to the wireless communication system 15. The wireless communication system 15 features a standard hardware component 19 (e.g. a system of [bay] base stations, computers, and switching and routing hardware) and software component 17 (e.g., software for controlling the above-mentioned hardware) that relay the data packet through a network connection (e.g., a digital line) 40 to the host computer system 12.

Paragraph beginning at page 27, line 4 has been amended as follows:

In addition, data packets routed through the wireless communications system 15 can be analyzed to determine the vehicle's approximate location. This can be done with relatively low

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accuracy (within a few miles) by simply recording the location of a specific [bay] base station in the hardware component 17 of the wireless communications system 15 that routes the data packet to the host computer system 12. The accuracy of the vehicle's location is increased by recording the location of multiple [bay] base stations within range of the vehicle, and then analyzing these data using conventional triangulation algorithms. The data collector/router can also be modified to include hardware for global positioning (GPS). Using a satellite infrastructure, GPS hardware transmits real-time longitude and latitude values that can be analyzed to accurately determine a vehicle's location.

In the claims:

Cancel claim 6, without prejudice.

Claims 1, 2, 4, 7, 13, 16, 17, 18, 21, and 24 have been amended as follows:

1. (Once Amended) A method for characterizing a vehicle's emissions, comprising the steps of:

generating data representative of the vehicle's emissions with at least one sensor disposed within the vehicle;

transferring the data to a data collector/router comprising[:

i) a microprocessor, and

ii)] a wireless transmitter configured to transmit data over a wireless communications network [in electrical contact with the microprocessor]; [and]

transmitting [a] data [packet] representing the [data] vehicle's emissions with the wireless transmitter over [an airlink to a] the wireless communications [system] network and then to a host computer system[.];

at the host computer system, analyzing the data representing the vehicle's emissions; and

at the host computer system, comparing the analyzed data to at least one predetermined value to characterize the vehicle's emissions.

2. (Once Amended) The method of claim 1, wherein the data [is] are serially transferred through an OBD-II connector or a similar serial interface to the data collector/router.

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4. (Once Amended) The method of claim 3, wherein the sensor generates a signal in response to gas containing at least one of oxygen, oxides of nitrogen, and hydrocarbons.

7. (Once Amended) The method of claim [6] 1, wherein the analyzing step further comprises extracting data [from the data packet] representative of the vehicle's emissions and storing the data in a computer memory or database.

13. (Once Amended) The method of claim [6] 1, further comprising sending an electronic text, data, or voice message to a computer, cellular telephone, or wireless device after the data [is] are analyzed, said message containing information about the analyzed data.

16. (Once Amended) The method of claim 15, wherein the results are displayed on a web page on the World-Wide Web or the Internet.

17. (Once Amended) The method of claim [6] 1, wherein the method further comprises [the step of] sending a second set of data [packet] from the host computer system over [an airlink to] the wireless communications [system] network and then to the data collector/router disposed in the vehicle.

18. (Once Amended) The method of claim 17, [wherein] further comprising processing the second set of data [packet is processed by] in the [microprocessor in the] data collector/router to generate a signal, and sending the signal [is sent] to at least one microcontroller disposed within the vehicle.

21. (Once Amended) A[n] system for characterizing a vehicle's emissions comprising[: a data collector/router comprising]:

a microprocessor configured to process data generated by at least one sensor disposed in the vehicle to generate [a] data [packet] representative of the vehicle's emissions; and

a wireless transmitter in electrical contact with the microprocessor and configured to receive the data representative of the vehicle's emissions [packet from the sensor] and transmit it

over [an airlink to] a wireless communications network [and then] to a host computer system, the host computer system [comprising a processor] configured to receive[d] the data [packet] from the network [and then], analyze the data [packet to generate data describing the vehicle's emissions.] with an algorithm and compare the analyzed data to one or more predetermined values to characterize the vehicle's emissions.

24. (Once Amended) The system of claim 23, wherein the data [is analyzed to infer, estimate, or predict] indicate a concentration of oxygen, oxides of nitrogen, hydrocarbons, or derivatives thereof.